FE362

Diagram No. 1116-3

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey Side Scan Sonar

Field No. HE-20-1-92

Registry No. FE-362SS

LOCALITY

State Louisiana

General Locality Gulf of Mexico

Sublocality 28NM South of Belle Pass

1992

CHIEF OF PARTY LCDR J.W. Blackwell

LIBRARY & ARCHIVES

DATE July 19, 1993

± U.S. GOV. PRINTING OFFICE: 1987-756-980

FE382

A/G PRODUCTS

REGISTER NO.
FE-362SS
FIELD NO.
HE-20-1-92
rey 13-14 May 1992
OPR-S-K940-HE
N. Harbison, ENS J.E. Martin
5F-6000N
ENS J.E. Martin, ST W.R. Morr
XYNETICS 1201 PLATER (AHS)
ENS J.E. Martin, ST W.R. Morr: XYNETICS 1201 Platter (AH5) red plot by HDAPS (FIELD)
XYNETICS 1201 PLATER (AHS)
XYNETICS 1201 PLATER (AHS)
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DESCRIPTIVE REPORT TO ACCOMPANY
SURVEY FE-36288
FIELD NUMBER HE-20-1-92
LOUISIANA
GULF OF MEXICO
28NM SOUTH OF BELLE PASS
SCALE 1:20,000
NOAA SHIP HECK 8-591
LCDR John W. Blackwell, NOAA, CMDG

A. PROJECT

This survey was conducted in accordance with Hydrographic Project Instructions OPR-S-K940-HE, Offshore of Timbalier Island, Louisiana, dated April 14,1992.

The purpose of this project is to provide updated information in response to requests by the United States Coast Guard, Eighth District, concerning the location of submerged obstructions in the area of South Timbalier Wreck Lighted Bell Buoy "WR2".

B. AREA SURVEYED

The survey area lies in the Gulf of Mexico, 28 nautical miles south of Belle Pass, Louisiana. The survey area consists of two adjoining search circles. One has a 1500 meter radius and is centered at LAT 28° 37′ 00" N, LON 090° 13′ 11" W. The other has a 2000 meter radius centered at LAT 28° 37′ 45" N, LON 090° 13′ 11" W.

Survey operations began on May 13, 1992 (DOY 134), and were completed on May 14, 1992 (DOY 135).

All data was gathered and processed using 1:20,000 specifications and submitted on 1:20,000 smooth plots, and 1:2,500 inset page plots.

C. SURVEY VESSELS

All hydrographic data were collected by the NOAA Ship HECK (EDP 9140). All offset and layback information is contained in the offset table located in section IV of the separates. No unusual vessel configurations were used.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

Survey data acquisition and processing were accomplished utilizing the HDAPS system hardware and the latest version of the NAVITRONIC NAVISOFT 300 software provided to the ship by N/CG24. A listing of actual programs and versions can be found in appendix VI.

Version 1.11 of program VELOCITY was used in determining the sound velocity correctors for this project.

E. SONAR EQUIPMENT

HECK is equipped with an EG&G model 260 slant range corrected Side Scan Sonar (SSS) recorder and model 272 single frequency towfish. Serial numbers and dates of usage are as follows:

Towfish S/N 011901 DOY 134 - 135 Recorder S/N 012106 DOY 134 - 135

The beam width and down angle are not adjustable on this unit.

All SSS data was collected using the 150 meter range scale and 100 Khz frequency.

Confidence checks were obtained, and annotated on the sonargrams, by towing the side scan unit either past known items or linear bottom features. A minimum of two confidence checks were obtained on a daily basis as required.

In general, sonargrams for this project are of excellent quality. The depth of water in the area allowed us to fly the towfish at a level well below the surface while at the same time maintaining adequate height off bottom to assure full swath coverage. This allowed sea return to be minimized.

Line spacing of 240 meters was used on the 150 meter range scale to maintain the required 2mm of adjacent line overlap. The side scan towfish was deployed off the stern when in use. All offset and layback information is provided in the offset table located in section IV of the separates.

100% side scan coverage was completed in the project area. Required proof of sonar coverage is demonstrated through the included sonar coverage plots. The hydrographer chose this method in lieu of the sonar coverage abstract. The choice of method is left to the hydrographer per Side Scan Sonar Manual section 3.1.3.

The sonar contact list (Side Scan Sonar Manual 3.1.1.1.) is provided through the HECK's modified contact abstract table and the automated HDAPS contact table printout. Both are located in the separates.

Two HDAPS contact tables were used during this survey. In order to prevent confusion all items were assigned a unique target number which corresponds with the fix position of the contact and is logged in the target number column of the side scan sonar abstracts, and on the contact plot. Some contacts have more than one target number from successive hits, developments, and detached positions. In this case the targets plotted on top of each other, however, the recommended charting positions were derived from their DPs and are mentioned in section N.

F. SOUNDING EQUIPMENT

The following Raytheon DSF-6000N echosounder was used during this survey:

S/N A107N

DOY 134 - 135

Both low and high frequency depths were digitized, but only high frequency depths were plotted.

The data was collected with the echosounder set at the automatic gain setting. There were no unusual problems with the DSF-6000.

Weather logs for all periods of hydrography have been included in Appendix VI.

G. CORRECTIONS TO ECHOSOUNDINGS

One velocity cast was conducted using the ODOM Digibar sound velocimeter (S/N 168):

DATE DOY POSITION

May 13, 1992 DOY 134 LAT 28°37.09'N LON 090°12.54'W

The velocity cast data were reduced and velocity corrections calculated using program VELOCITY Version 1.11. The computed velocity correctors were then applied on line to echosounder depths (both high and low frequency) by entering the correction data into HDAPS sound velocity table 1.

The digibar was checked on November 1, 1991 by ODOM and found to be performing within specifications. Field checks using the prescribed fresh water method were conducted prior to each cast and recorded on the velocity cast form.

On DOY 115 a dual leadline comparison was conducted. A mean difference of 0.06 meters was obtained resulting in a corrector of 0.0 meters.

The static draft of 2.10 meters was applied on line to all echosoundings via the HDAPS offset table.

Settlement and squat correctors for the HECK were determined on March 13, 1991 (DOY 72), in the vicinity of Craney Island fuel pier in Norfolk, Virginia using the level rod method. The correctors are on file at N/CG244. Settlement and squat values were applied on line to hydrographic soundings via the HDAPS offset table.

Heave is measured by a Datawell B.V. (S/N 19110-C) heave, roll, and pitch sensor (HIPPY) located midships near the transducer. The sensor gathers on line data which is applied to the soundings in near real time. All data acquired in the echosounder mode have been corrected by applying HIPPY correctors.

In situations where the HIPPY locked up, selected soundings were scanned and depths edited to remove the heave error.

The tidal datum for this survey was mean lower low water (MLLW). The tide station at Grand Isle, Louisiana (876-1724) was the reference station for this survey. The station was observed by Rick D. Vinson. No tide stations were established or leveled by the HECK in support of this survey.

All hydrographic depths have been corrected for predicted tides using the zone correctors specified in the project instructions. Tidal correctors were applied on line via the HDAPS predicted tide table. Approved Tides and zoning were applied during office freessing.

H. CONTROL STATIONS Jee Also section 2, a. of the Evaluation Report

The horizontal datum for this project is the North American Datum of 1983 (NAD 83). There were no shore stations established for this project. DGPS was the only positioning system used.

I. HYDROGRAPHIC POSITION CONTROL See Also section 2 a of the Evaluation Report.

Position control was Differential GPS, utilizing an Ashtec Model-12 GPS receiver and a Magnavox MX-50R beacon receiver. Serial numbers for these units can be found on the daily printouts with the survey data.

System checks were conducted by comparing the position from the M-12/MX-50R combination receiving corrector information from the Galveston beacon with a position from an Ashtec OEM/MX50R combination receiving corrector information from the Aransas Pass beacon. The performance checks were in accordance with the Field Procedures Manual and appear on the DGPS Performance Check form.

All survey offsets, including GPS antenna offsets, were applied on-line using the HDAPS Offset Table number 1 located in section IV of the separates.

A maximum allowable HDOP of 3.7 and a maximum EPE of 30 meters were computed for this survey. Data not meeting these requirements were examined and high HDOPs or EPEs either smoothed or rejected.

Several problems presented themselves in the use of DGPS for positioning. First, at night we were not able to receive corrector information from the Galveston beacon, 250 nautical miles away. This limited our operations to daylight hours. Second, the DGPS positioning had a difficult time following the ship during turns. It often took 500-1000 meters for the system to catch up with the ships heading and figure out where it really was. The net effect of these problems was an increase in the time required to collect and process data.

- J. SHORELINE See Section 2.b. of the Evaluation Report.

 Not applicable as per project instructions.
- K. CROSSLINES See section 3. a of the Evaluation Report.

 Not applicable as per project instructions.
- L. JUNCTIONS Lee Also section 5. of the Europatism Report
 Not applicable as per project instructions.
- Not applicable as per project instructions.
- N. COMPARISON WITH THE CHART Jee section 7. of the Eustration Report

 SUBMITTED

 No danger to navigation reports were filled as a result of this survey.

AWOIS

NARRATIVE

8207

This item is a large drilling rig "Bluewater No. 1" that capsized and sunk in late 1964. The rig was 242 feet long and 202 feet wide. The wreck appears on NOAA chart 11357 27th ed. 4 MAY 91 as an Obstruction (lighted, floating) in a large danger circle centered around a Lighted Bell Buoy "WR2". (In the AWOIS history of 8207, there

was a period when the rig was refloated and anchored in a capsized position with about ten feet above the surface and was marked with a quick flashing white light (NM 44/65)). Upon arrival in the area it was evident that there was no lighted floating obstruction. The wreck was initially investigated and found by running hydro lines. Subsequent development utilized the side scan sonar at the 150 meter range scale. It was identified as target 70.35 on Contact Table 1. It was further developed by running hydro lines with 12 meter line spacing. This defined the edges of the obstruction. A least depth was found at DP 27 to be 14.7 meters. The hydro development of this item is shown on a page plot (see Separates

Section VI). Only the main scheme hydro appears or field with field records

LAT 28°37'51.7%"N LON 090°13'20.386"W E 19935.2 N 69932.6

Recommendation: This item is significant and should be charted as an Obstruction with a least depth of 14.7/3.9 meters. A danger circle of radius 100 meters should be centered at the above position. The "Obstruction (lighted, floating)" should be removed from the chart. Concur. Jee 4/50 Jec 144 7.a. 1) of The Evalvation Report.

8208

This item was supposed to be an obstruction that was struck by the mud boat "Baroid Express" in December 1965. The "Baroid Express" had a draft of six feet. The item appears on NOAA chart 11357 27th ed. 4 MAY 91 as submerged obstructions inside a large danger circle centered around the Lighted Bell Buoy "WR2". This item was investigated using side scan sonar on DOY 134. Although there was some scattered debris in the area, the only item found to be significant was the sunken drilling rig AWOIS 8207. It is the belief of the hydrographer that the item struck by the "Baroid The debris Express" was actually AWOIS 8207. found in the area was probably left from when the rig "Bluewater No. 1" capsized.

Recommendation: This item is the same as AWOIS
8207. The submerged obstructions should be removed
from the chart. Concor. Jee 4/50 section 7. a. 2) of the Euclidean
Report.

8209

This item is the "M/V Baroid Express" that struck an unknown submerged obstruction on 31 DEC 1965. The item appears on NOAA chart 11357 27th ed. 4 MAY 91 as a wreck PA inside a large danger circle centered around the Lighted Bell Buoy "WR2". This item was investigated using side scan sonar on DOY 134. It is identified as target 164.67 on Contact Table 1. It was further developed by running hydro lines with 12 meter line spacing. This identified the edges of the obstruction as well as a least depth of 41 meters at position 338. The hydro development of this item is shown on a page plot (see Separates — Filed WITH The Section VI). Only the main scheme hydro appears original on the depth plot.

LAT 28°38'15.753"N LON 090°12'37.999"W E 21086.4 N 70672.5

Recommendation: This item is significant and should be charted as a Wreck in the above position with a least depth 4% meters. Concur. See Also section 7, a, 3) of the Evaluation Report.

O. ADEQUACY OF SURVEY

This survey meets or exceeds 1:20,000 specifications, and is adequate to supersede all prior surveys for the purposes of charting the depths and hazards to navigation within the survey

P. AIDS TO NAVIGATION JEE A/SO SECTIONS 4. a. And 7. c. of the Evaluation Report

South Timbalier Lighted Bell Buoy "WR2" lies in the area of this survey. It is positioned to mark a submerged obstruction in the area. It's position is adequate for this purpose. Preliminary data describing the significant obstructions and the placement of this buoy were forwarded to USCG Cutter Sweetgum.

There were four oil platforms in the survey area at the following positions:

LAT 28°38′34.479"N LON 090°13′55.819"W - CHEVRON ST-134-T LON 090°13′56.460"W - CHEVRON ST-134-F LON 090°13′56.460"W - CHEVRON ST-134-F LON 090°13′59.922"W - CHEVRON ST-134-W LON 090°14′31.592"W - NO NAME OBTAINED

All of these compare well with their charted positions. Concur.

There were numerous submerged pipelines associated with these platforms.

Q. STATISTICS

ITEM	AMOUNT		
1. Total Number of Positions 2. Lineal NM of Soundings 3. Square NM Hydrography 4. Days of Production 5. Bottom Samples 6. Tide Stations Established 7. Current Stations Established 8. Velocity Casts Performed 9. Magnetic Stations Established 10. Detached Positions	337 Fixes 53.1 NMi 5.3 NMi ² 2 Days None None None 1 Cast None 6		
TO. Decached Lobicions	-		

R. MISCELLANEOUS

No anomalies in either tide, current or magnetics were noted.

No bottom samples were taken as part of this survey.

8. RECOMMENDATIONS JEZ Also the Evaluation Report

Recommendations concerning specific targets and changes to the chart are located in section N of this report.

T. REFERRAL TO REPORTS

This report stands alone. No additional reports will be submitted.

Respectfully Forwarded,

James E. Martin, ENS, NOAA Field Operations Officer NOAA Ship HECK

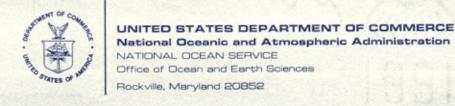
VII. LETTER OF APPROVAL

Field operations contributing to the accomplishment of this survey were conducted under my direct supervision with frequent personal checks of progress and data quality. This report, field sheets, and data records have been closely reviewed and are complete and adequate for charting.

John W. Blackwell, LCDR, NOAA

Commanding Officer

NOAA Ship HECK



TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: June 22, 1992

MARINE CENTER: Atlantic

OPR: S-K940-HE-92

HYDROGRAPHIC SHEET: FE-362-SS

LOCALITY: Gulf of Mexico, 28 NM South of Belle Pass, Louisiana

TIME PERIOD: May 13 - 14, 1992

876-1724 Grand Isle, Louisiana Lat. 29^o 15.8'N Lon. 89^o TIDE STATION USED:

Lon. 89° 57.4'W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 5.45 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.1 ft.

REMARKS: RECOMMENDED ZONING

Apply a -30 minute time correction and a X1.26 range ratio to Grand Isle, Louisiana (876-1724).

Note: Times are tabulated in Central Standard Time.

CHIEF, DATUMS SECTION



NOAA FORM 76-155 (11-72) N	ATIONAL	OCEANIC		EPARTMI IOSPHERI				RVEY N	JMBER	
GE	GEOGRAPHIC NAMES					1	FE-362 SS			
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BELL PASS (title)										1
LOUISIANA (title)										2
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HYDROGRAPHIC SURVEY STATISTICS REGISTRY NUMBER: FE-362SS

NUMBER OF CONTROL STATIONS		1
NUMBER OF POSITIONS		312
NUMBER OF SOUNDINGS		1687
	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	55	12/10/92
VERIFICATION OF FIELD DATA	95	02/12/93
ELECTRONIC DATA PROCESSING	11	
QUALITY CONTROL CHECKS	18	
EVALUATION AND ANALYSIS	50	02/24/93
FINAL INSPECTION	30	05/07/93
TOTAL TIME	259	
ATLANTIC HYDROGRAPHIC SECTION API	PROVAL	05/07/93

12-71) NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATIC	REFERENCE NO.			
12-71)	N/CG244-85-93			
LETTER TRANSMITTING DATA	DATA AS LISTED BELOW WERE FORWARDED TO YOUR BY (Check):			
	ORDINARY MAIL AIR MAIL			
0:	REGISTERED MAIL EXPRESS			
Chief, Data Control Section, N/CG243				
NOAA/National Ocean Service	GBL (Give number)			
SSMC3, Station 6815	FEDERAL EXPRES			
Silver Spring, Maryland 20910	DATE FORWARDED			
L	8 June 1993			
_	NUMBER OF PACKAGES			
	1 box			
etc. State the number of packages and include an executed copy of the letter should be sent under seceipt. This form should not be used for correspondence or transmit	separate cover. The copy will be returned as a			
FE-362SS				
Louisiana, Gulf of Mexico, 28 NM South of Belle	Pass Pass			
1 Box containing:	Control of the Contro			
★ Original Descriptive Report for FE-362SS	with 1 final page-sized smooth			
plot $oldsymbol{ au}$ Envelope containing smooth position over	rlay and excess sounding overlays			
for sheet 1				
-1 Envelope containing Miscellaneous Data rem Report	loved from the original Descriptive			
+ Envelope containing Supplemental data re	moved from printouts			
TEnvelope containing sounding correctors Cahier with final sounding, position, co	ontrol and line file listing			
1 Accordian File containing data printouts	and fathograms for VESNO 9140 for,			
JDs: 134 and 135. 2 Envelopes containing side scan sonograms	for VESNO 9140 for JDs:			
134 and 135.	en e			
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Deborah A. Bland	(Name, Division, Date)			
turn receipted copy to:	┪			
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Atlantic Hydrographic Section, N/CG244	D.S. Clark			
439 W. York Street				
Norfolk, VA 23510-1114	UU 1 o 1002			
	JUL 1 9 1993			

NOAA FORM 61-29

COAST AND GEODETIC SURVEY ATLANTIC HYDROGRAPHIC SECTION EVALUATION REPORT

SURVEY NO.: FE-362SS **FIELD NO.:** HE-20-1-92

Louisiana, Gulf of Mexico, 28 NM South of Belle Pass

SURVEYED: 13 May through 14 May 1992

SCALE: 1:20,000 **PROJECT NO.**: OPR-S-K940-HE-92

SOUNDINGS: RAYTHEON DSF-6000N Fathometer and EG&G Model 260

Side Scan Sonar

CONTROL: ASHTEC Model-12 Global Positioning System (GPS)

Sensor/MAGNAVOX MX-50R Differential Global

Positioning System (DGPS) Receiver

Chief of Party.....J. W. Blackwell

Automated Plot by......XYNETICS 1201 Plotter (AHS)

1. <u>INTRODUCTION</u>

- a. This is a side scan sonar item investigation survey. A RAYTHEON DSF-6000N fathometer was operated concurrently with the side scan sonar. Least depths on items were determined using the fathometer.
- **b.** One 1:20,000 scale page size smooth plot was generated during office processing and is attached to this report. This plot is considered the smooth plot for this survey.
- c. No unusual problems were encountered during processing.
- **d.** Notes in the Descriptive Report were made in red during office processing.

2. CONTROL AND SHORELINE

a. Control is adequately discussed in sections H. and I. of the Descriptive Report.

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). Office processing of this survey is based on these values. The smooth sheet has been annotated with ticks

showing the computed mean shift between the survey datum and the North American Datum of 1927 (NAD 27).

To place this survey on the NAD 27 move the projection lines 0.873 seconds (26.861 meters or 1.34 mm at the scale of the survey) north in latitude, and 0.259 seconds (7.048 meters or 0.35 mm at the scale of the survey) west in longitude.

All geographic positions listed in this report are on NAD 83 unless otherwise specified.

b. There is no shoreline within the limits of this survey.

3. HYDROGRAPHY

- a. The hydrography collected on this survey during side scan sonar operations is of reconnaissance value only. This does not pertain to the depths shown on the smooth plot included in this report.
 - b. Where crossings occur there is adequate agreement.
- c. The scarcity of sounding data precluded the drawing of depth curves.
- **d.** The development of bottom configuration and determination of least depths are considered adequate.

4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographic records and reports conform to the requirements of the HYDROGRAPHIC MANUAL, SIDE SCAN SONAR MANUAL, FIELD PROCEDURES MANUAL, with the following exceptions:

- a. The field unit verified but did not acquire positional data for the charted bell buoy "WR2" in the survey area as required by section 6.15.1. of the Project Instructions. During office processing the bouy has been positioned on the present survey by using the computed mean of two side scan sonar contacts.
- b. Positional data for the positions of four oil platforms was not provided in the field records by the hydrographer. A telephone conversation with the hydrographer determined that the platforms were each located with a detached position. These platforms are shown on the present survey. No change in charting status is recommended.

5. JUNCTIONS

There are no junctional requirements for this survey. Present survey depths are in harmony with the charted hydrography.

6. COMPARISON WITH PRIOR SURVEYS

a. Hydrographic

H-6155 (1936) 1:40,000 H-6184 (1936) 1:80,000

Prior hydrography shown on H-6155 (1936) compares favorably with present hydrography in the common area. Scattered soundings range plus or minus (\pm) 0³ to 0⁶ meter (1 to 2 ft).

Eight soundings shown on prior survey H-6184 (1936) fall within the common area of the present survey. These prior soundings range 0 to 2 meters (0 to 6 ft) shoaler than the present survey.

The present survey is adequate to supplement the prior surveys in the common areas.

7. COMPARISON WITH CHART 11357 (28th Ed., 25 Apr/92) 11340 (55th Ed., 12 Sep/92)

a. Hydrography

The charted hydrography originates with prior survey H-6155 (1936) and requires no further discussion. The following should be noted:

1) AWOIS item #8207 is a dangerous submerged obstruction, PA (lighted) (floating), charted in Latitude 28°37'00.87"N, Longitude 90°13'30.26"W, originating with Notice to Mariners 44 of 1964 (NM44/64) and subsequently revised by Chart Letter 638 of 1966 (CL638/66). The AWOIS listing position is Latitude 28°37'00.0"N, Longitude 90°13'11.0"W. The item was investigated in both areas with negative results. An obstruction was found in the vicinity of AWOIS item #8208 and is believed to be AWOIS item #8207. It is recommended that the dangerous submerged obstruction, PA (lighted) (floating) (AWOIS item #8207) be removed from the chart.

- 2) AWOIS Item #8208, dangerous submerged obstructions, charted in Latitude 28°37'51"N, Longitude 90°13'22"W, originates with Chart Letter 638 of 1966 (CL638/66) and subsequently revised by U.S Coast Guard Obstruction Report, dated 7 March 1966. The item was searched for and found using side scan sonar. A fathometer development run by the field unit obtained a depth of 13° meters (45 ft) in Latitude 28°37'51.73"N, Longitude 90°13'20.39"W. The approximate limits of the sunken rig and debris are shown on the present survey. It is recommended that the charted dangerous submerged obstructions be revised and charted as shown on the present survey.
- 3) AWOIS Item #8209, a charted dangerous sunken Wreck, PA, in Latitude 28°38'00.87"N, Longitude 90°13'30.26"W, originates with Chart Letter 638 of 1966 (CL638/66) as the M/V BAROID EXPRESS. The item was investigated with no indication of a wreck in the vicinity of the charted position. A wreck was located and developed in Latitude 28°38'15.76"N, Longitude 90°12'38.00"W, 1492 meters NE of the charted position. A fathometer depth of 40 meters (131 feet) was obtained on the wreck. It is recommended that the dangerous sunken wreck PA be deleted from the chart and a wreck with a depth of 40 meters (131 ft) be charted as shown on the present survey.
- 4) The following uncharted <u>obstructions</u> were found during office processing:

DEPTH (m/ft)	LATITUDE (N)	LONGITUDE (W)
38/124	28°38'43.36"	90°13'41.74"
41/134	28°38'37.17"	90°12'57.44"

It is recommended that the <u>obstructions</u> be charted as shown on the present survey should the scale of the chart allow.

The present survey hydrography shown on the smooth plot included in this report to determine least depths has had all correctors applied and is adequate to supersede the charted hydrography within the common areas.

b. Dangers to Navigation

There were no dangers to navigation submitted by the field unit. No dangers were discovered during office processing.

c. Aids to Navigation

There are no fixed aids to navigation within the limits of this survey. One floating aid to navigation was located on the present survey. This aid appears adequate to serve its intended purpose.

8. COMPLIANCE WITH INSTRUCTIONS

This survey adequately complies with the Project Instructions except as noted elsewhere in this report.

9. ADDITIONAL FIELD WORK

This is an adequate side scan sonar survey. No additional work is recommended.

Douglas V. Mason

Cartographic Technician Verification of Field Data Deborah A. Bland

Senior Cartographic

Technician

Evaluation and Analysis

Leriov G. Cram

Senior Cartographic Technician

Verification Check

APPROVAL SHEET FE-362SS

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the magnetic tape record for this survey. Final control, position, and sounding printouts of the survey have been made. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Richard H. Whitfield	Date: <u>1447. 1993</u>
Richard H. Whitfield	
Cartographer, Evaluation and Analys	sis Team

Atlantic Hydrographic Section

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Christopher B. Lawrence, CDR, NOAA
Chief, Atlantic Hydrographic Section

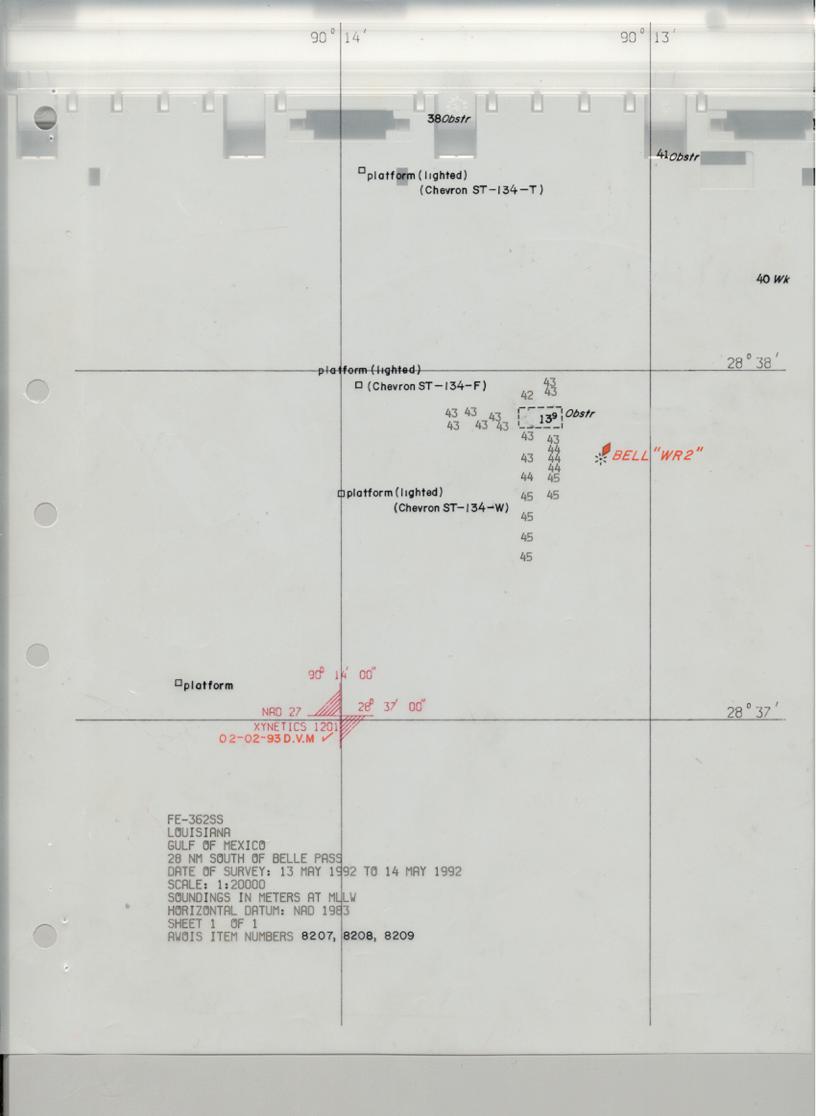
Final Approval:

Approved: J. Austin Yeager

Date: _ 7 |

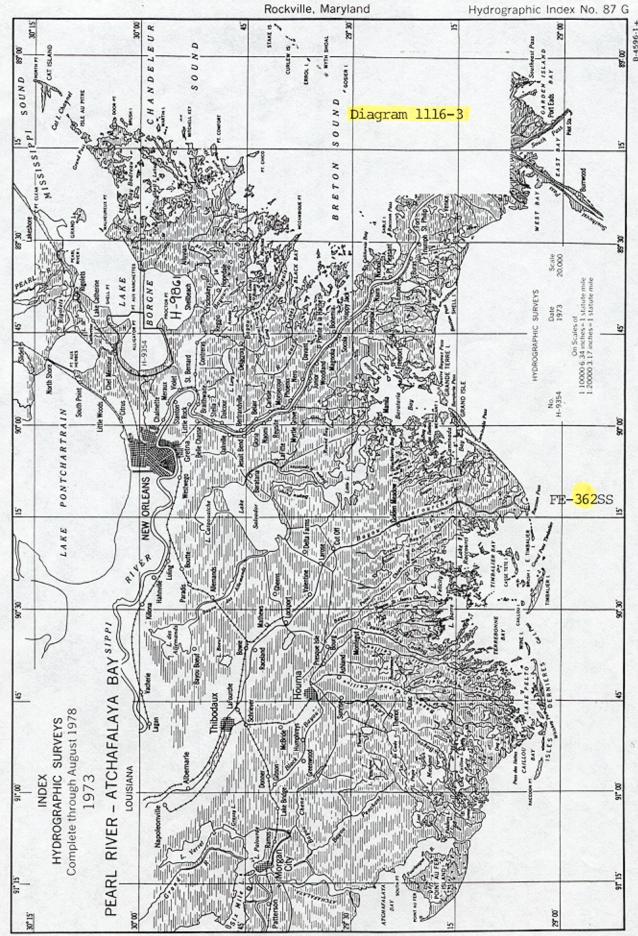
Rear Admiral, NOAA

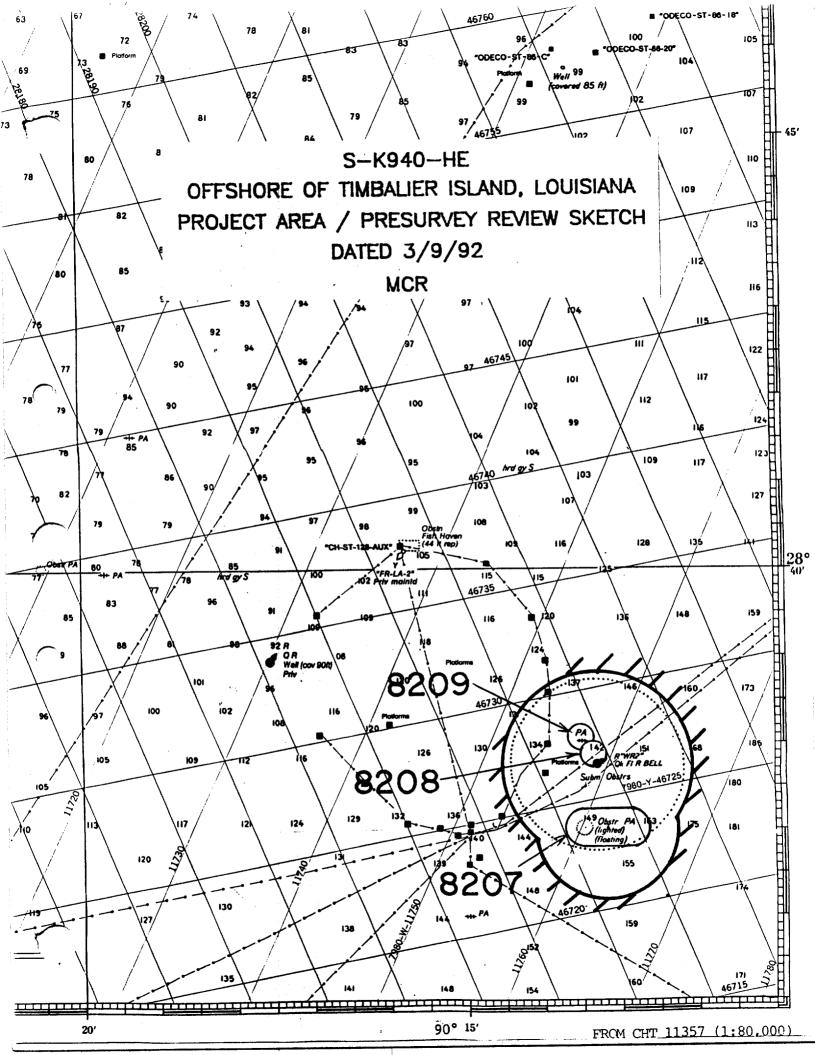
Director, Coast and Geodetic Survey



DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration

National Ocean Survey





MARINE CHART BRANCH RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. _FE=362SS

INSTRUCTIONS

- A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
- 1. Letter all information.
- 2. In "Remarks" column cross out words that do not apply.

	1	1	made under "Comparison with Charts" in the Review.
CHART	DATE	CARTOGRAPHER	REMARKS
11357	9/4/93	The Barber	Full Part Before After Marine Center Approval Signed Via
			Drawing No. 43 APP'd in full-before final signature
411	2-10-94	Thum Ichimack as	Full Part Refore After Marine Center Approval Signed Via
	,	0	Drawing No. 65 EXAM NC - 3E AREA
11366	8/25/94	2 11.4	Full Part Before After Marine Center Approval Signed Via
7 1 3 600	2/01/	V + COLOR	Drawing No. 2 APP'D THRU 11357
17340	1x /c /94	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Full Part Before After Marine Center Approval Signed Via
17210	10/6/77	Many 8-20 Allows	Drawing No. 43 Apold thru 11357
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
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			Drawing No.
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